Common Market for Eastern and Southern Africa
Comprehensive African Agriculture Development Programme

Solving the Problem of Residues in Livestock Commodities

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Residues in livestock commodities refer to unwanted substances like poisons, drugs and hormones that can be detected in meat, milk or eggs from animals that were exposed to them during their lifetime. Since these products are derived from apparently healthy animals, any poisons that might be detected would be in small enough quantities not to have caused death or even illness in the animal. All the same, there are standards set for the levels of such substances that can be tolerated in human food, and usually they are very low or even zero. Standards are also set for the levels of veterinary drug residues that can be tolerated in human food, because there is concern that by eating food containing drug residues people might develop resistance to medicines (antibiotics and other antimicrobials). Side effects from hormones are also feared. For the COMESA Green Pass, a strategy will have to be developed to ensure that the certified products do not contain unwanted residues.

Background

Concern about unwanted residues in food is a comparatively recent development. It has been known for a long time that food may contain residues of poisonous substances such as heavy metals and pesticides that can be harmful to human health. A nervous syndrome that people suffered in Japan known as 'Minamata disease" resulted from eating fish that contained mercury as a result of water pollution. Some poisons, like heavy metals, tend to accumulate in the body and therefore even small quantities if taken in over a long period can cause serious disease. Concern about drug residues is more recent. It developed mainly as a result of the widespread use of antibiotics in animal feed to prevent disease and promote growth in industrialised farming systems. Since veterinary and human drugs are similar, it is feared that if humans are exposed to even small quantities of antimicrobials over a period of time they may develop resistance, and the human drugs of the same groups

will no longer work for them. Additionally, some drugs have side effects that it is feared may affect people exposed to residues. Hormones are used as growth promoters or to regulate reproduction in farm animals. It was demonstrated that the daughters of women who had been exposed to stilboestrol, a synthetic hormone that was widely used in cattle, frequently developed early cervical cancer, and the use of stilboestrol was banned. Cases of men developing female characteristics after eating meat containing hormones were highly publicised although not scientifically confirmed. The EU bans completely the use of any hormones as growth promoters in food animals.

How are residue levels in livestock commodities determined?

Determining whether residues are present at the very low permitted levels, and identifying trace amounts of substances whose presence is altogether prohibited, requires sophisticated and expensive laboratory equipment and highly skilled technicians to operate it. Because the EU and other importers of livestock products exercise zero tolerance for certain substances, more sensitive equipment is constantly being developed to detect ever more minute quantities, meaning that very expensive equipment may need to be replaced rather frequently. Building laboratory capacity for residue detection is a challenge for developing countries. The cost of up-to-date equipment is not the only constraint. Infrastructural problems related especially to electricity and water supplies are the norm rather than the exception, and will adversely affect not only the quality of testing but also equipment itself. Under less than ideal conditions, retention of highly qualified and skilled personnel cannot be guaranteed.

Is there any way other than laboratory testing to control residues?

Controlling drug residues requires a holistic approach based on a strategy that will as far as possible prevent the presence of unwanted substances in food. Countries should have a policy and legislation relating to pharmaceuticals that imposes all the necessary controls for the responsible use of veterinary as well as human drugs. Even more importantly, producers and veterinarians should be made aware of the dangers of misusing drugs, such as not observing withdrawal periods or using products not registered for use in their or their client's animals. Even if the animals are produced for local consumption only, there is a responsibility to protect consumers from harmful substances. If the necessary measures to prevent drug misuse leading to residues are in place, periodic checks with testing at a reference laboratory should suffice to confirm that they are working.

What should be done at regional level in terms of residues?

Most importers are mainly concerned to know that the necessary controls in terms of drugs and residues are in place in the exporting country, and will not demand that capacity to perform testing should be available. The most important thing therefore is to ensure that any member country from which livestock commodities are sourced has the necessary legislation in place to control veterinary drug use. Harmonising the veterinary drug legislation in the region as far as possible by raising it to the highest level of control would be a positive action in support of certification of product safety.

Although testing is not always a requirement for export, it is probable that the importer will carry out tests from time to time, and if unacceptable levels of unwanted substances are detected this will create a problem. It is therefore prudent to identify a laboratory within the region or elsewhere with the necessary capacity and carry out 'own' tests to confirm that the system is working and veterinarians and producers are complying with the regulations.

Residues are rarely a problem in livestock raised extensively on natural pasture, so it is important to target feedlots and other types of intensive production when testing for residues in livestock commodities.

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Further information

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